

CLAIMS

1. A winding coil assembly of a reciprocating motor comprising:
  - an outer stator;
  - 5 an inner stator arranged at an inner circumference surface of the outer stator with a certain air gap;
  - a magnet linearly and movably arranged between the outer stator and the inner stator; and
  - a winding coil mounted on either the outer stator or the inner stator,
- 10 wherein the winding coil is formed as a ring shape by being wound a coil with a plurality of turns, and the coil is integrally molded by a molding material of coil.

2. The winding coil assembly of claim 1, wherein the coil is manufactured by sequentially coating polyester imide layer and self-lubricating polyamide layer on a surface of copper wire.

The winding coil assembly of claim 1, wherein the coil is manufactured by coating polyester imide layer on a surface of cooper wire, coating polyamide imide layer on a surface of the polyester imide layer, and coating self-lubricating polyamide layer on a surface of the polyamide imide layer.

3. The winding coil assembly of claim 1, wherein the coil is manufactured by coating polyester imide layer on a surface of cooper wire,

coating polyamide imide layer on a surface of the polyester imide layer, and coating self-lubricating polyamide layer on a surface of the polyamide imide layer.

5        4.        The winding coil assembly of claim 1, wherein the coil is manufactured by sequentially coating polyamide imide layer and self-lubricating polyamide layer on a surface of copper wire.

10      5.        A winding coil assembly of a reciprocating motor comprising:  
an outer stator;  
an inner stator arranged at an inner circumference surface of the outer stator with a certain air gap;  
a magnet linearly and movably arranged between the outer stator and the inner stator; and  
15      a winding coil mounted on either the outer stator or the inner stator,  
wherein the winding coil is formed as a ring shape by being wound a coil with a plurality of turns, and the coil is firstly molded by a molding material and secondly molded by a die.

20      6.        The winding coil assembly of claim 5, wherein the coil is manufactured by coating polyester imide layer on a surface of copper wire, coating polyamide imide layer on a surface of the polyester imide layer, and coating self-lubricating polyamide layer on a surface of the polyamide imide

layer.

7. A manufacturing method of a winding coil of a reciprocating compressor comprising the steps of:

- 5 winding a coil on a jig;
- firstly molding the wound coil;
- separating the firstly molded winding coil from the jig; and
- secondly molding the winding coil separated from the jig.

10 8. The method of claim 7, wherein the jig has a cavity where a coil is wound in a circumference direction and has a certain intensity which can freely control of a winding intensity of the coil.

9. The method of claim 7, wherein the first molding s performed by  
15 heating the coil wound on the jig, thus melting the self-lubricating polyamide layer stacked at the outermost side of the coil, and thereby bonding gaps between the coils.

10. The method of claim 7, wherein the second molding is  
20 performed by inserting the winding coil into a cavity of a die and then injecting molten metal into the cavity.